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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,655	08/30/2001	Hiroshi Kanazawa	381KA/50358	7423

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EXAMINER	
ELKASSABGI, HEBA	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/941,655	Applicant(s) KANAZAWA ET AL.	
	Examiner Heba Elkassabgi	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 1 19(a)-(d). The certified copy has been filed in parent Application No. 09941655, filed on 08/30/2001.

Drawings

The drawing objection in the Final Office action of 12/05/2003 is withdrawn in light of applicant's remarks and interview of 06/02/2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kusase (US Patent 5132581).

Kusase discloses in figures 1-3 a generator having a rotor (2) and a stator (1) constituted by coiling stator windings (12) over a stator core (1), wherein a rotor (2) comprises a pair of claw-type magnetic poles ((223) arranged in an opposed relation, permanent magnets (24) having rectangular lateral surfaces, which face in a circumferential direction of the rotor (2) and form magnetic pole surfaces, disposed between and in contact with opposing lateral surfaces of adjacent claws of the pair of

claw-type magnetic poles (223), and field windings coiled (23) radially inward of the plurality of claws (223); and the opposing lateral surfaces of the claws (223) adjacent the permanent magnets (24) are formed into substantially the same rectangular shape as the magnetic pole surfaces with which they are in contact, such that the lateral surfaces of the claws (223) are in contact with the whole of the rectangular lateral magnetic pole (223) surfaces of the permanent magnets (24). In regards to claim 2, each of the plurality of claws has an auxiliary magnetic pole portion which contacts the whole of the magnetic pole surface of the permanent magnet and that a surface which has a shape that differs from a shape of an axial cross section of a circumferentially central portion of the a claw. In regards to claim 3, an auxiliary magnetic pole portion is formed to have a greater thickness at a radially outer portion than a radially inner portion. In regards to claims 4 and 5, figures 1 and 3 show a parallel radial inner/outer surfaces of the claws pole (223) and the ring shaped coupling member (271,281) doughnut disc portions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusase (US Patent 5132581) as applied to claim #1 above, and further in view of Kusase et al. (US Patent 5483116).

Kusase ('581) discloses the claimed invention, except for the magnet-holding member. Kusase et al ('116. Each claws (15) has a magnet holding portion (12) for holding the permanent magnet (11) and that the permanent magnet holding portion (12) is a protective member that is disposed at least on an outer side of the permanent magnet (11) in the radial direction of the rotor (3).

It would have been obvious to one of ordinary skill in the art to combined he rotor claw pole structure of Kusaes ('581) with the magnet holder of Kusase et al. ('116) in order to hold the both the circumferential side faces of permanent magnet directly contact the side faces of claw-like magnetic poles and the magnetic flux of permanent magnets can be further improved.

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusase (US Patent 5132581) as applied to claim #1 above, and further in view of Kusase et al. (US Patent 5483116).

Kusase ('581) discloses above the claimed invention in addition to each claws has an auxiliary magnetic pole portions formed at circumferentially lateral ends, in which the auxiliary magnetic pole portions form the opposing lateral surfaces of the claws adjacent the permanent magnets and have substantially the same rectangular shape as the magnetic pole surfaces with which they are in contact such that the lateral surfaces

of the claws are in contact with the whole of the magnetic pole surfaces of the permanent magnets. However, Kusase ('581) does not disclose a central portion of the claw having a triangular or trapezoidal shape.

Kusase et al. ('116) discloses in figures 1-3 a rotor of a claw-type magnetic poles having a circumferentially central portion of each of the claws is tapered towards a tip of each respective claw and that the circumferentially central portion has a substantially triangular shape in a radial section plane along an axial direction of the rotor.

It would have been obvious to one of ordinary skill in the art to combine the rotor structure of Kusase ('581) with the rotor claw pole structure of kusase et al. ('116) in order for to suppress the permanent magnet in a centrifugal direction with greater precession.

3. Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusase (US Patent 5132581) and further in view of Kusase et al. (US Patent 5483116).

Kusase ('581) discloses in figures 1-3 a stator (1) having a stator core ((11) and stator windings (12) coiled over the stator core (11) and a rotor (2) provided to rotor in a circumferential direction relative to the stator with gaps separating the rotor and stator. In which a pair of claw type magnetic poles (223,213) arranged in an opposed relation. Furthermore, field windings (23) are coiled with the claw-type magnetic poles (223,213) and a plurality of permanent magnets (24) are provided with the claw-type magnetic poles. In which each of the claw-type magnetic poles have a plurality of claws disposed in alternate and circumfertial direction of the rotor. Each of the claws has a lateral

surface, which faces in a substantially opposed direction circumferentailly of the rotor. The permanent magnets are interposed between the claws adjacent claws has a lateral surface, which faces in an opposed directions circumferentially of the rotor. The permanent magnets are interposed between adjacent claws such that each of the lateral surfaces of the permanent magnets faces a corresponding one of the lateral surfaces of the claws in an opposed relation while each of the lateral surfaces of the permanent magnets provides a magnetic pole surface.

Kusase et al. ('116) discloses in figures 1-9 a whole area of the magnetic pole surfaces of each of the permanent magnets physically contacts with the lateral surfaces of each of the claws so as to magnetically connected there with in order to suppress the permanent magnet in a centrifugal direction with greater precession. In regards to claim 12, a circumferentially central portion of each of the claws is tapered toward a tip of each respective claw which the central portion has a trapezoidal shape in a radial section plane along an axial direction of the rotor and that a lateral surface of the permanent magnets have a substantially rectangular shape. Each of the claws has an auxiliary magnetic pole portion formed at a circumferentially lateral ends which the auxiliary magnetic pole portions form a lateral surface of the claws and have a substantially the same rectangular shape as a lateral surfaces of the permanent magnets.

It would have been obvious to one of ordinary skill in the art to combine the rotor structure of Kusase ('581) with the rotor claw pole structure of kusase et al. ('116) in

order for to suppress the permanent magnet in a centrifugal direction with greater precession.

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (571) 272-2023. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BURTON S. MULLINS
PRIMARY EXAMINER

Heba Y. Elkassabgi